THE LINDE GROUP

Houston Petrochemicals. Expand your ethylene plant capacity and increase efficiency.

Seven ethylene furnaces supplied in United Arab Emirates

EPC capabilities and global presence

Linde Engineering offers technology, engineering, procurement, fabrication and construction engineering services for petrochemical plants worldwide.

Our Houston-bases olefins experts offer many services, including, but not limited to the following topics:

- → Feed flexibility
- → Capacity increase
- → Flare minimization
- → Process debottlenecking
- → On site support
- → Plant audits
- → Safety expertise
- → Environmental

For complete EPC projects, Linde Engineering takes full, single source responsibility. For new furnaces, this may include the furnace pipe rack, all civil work, and full integration of the furnaces into the plant.

In recent years, we have successfully executed ethylene furnace projects on the Arabian peninsula, in South East Asia, South America, and the United States. These projects have demonstrated our strong qualifications for execution, as we have consistently accomplished mechanical completion on or ahead of schedule.

During project execution, Linde Engineering is responsible for the process design package, detail engineering, procurement, and construction.

Advanced ethylene technology

The utilization of Linde's advanced Pyrocrack® technology assures that our furnaces incorporate the most modern technologies for cracking selectivity, energy efficiency, furnace availability and more. Our capabilities further ensure that our furnaces are easily maintained, mechanically robust, and reliable.

For furnace revamps we provide solutions to achieve higher yields, increase furnace capacities, provide furnace feed flexibility, enhance energy efficiency, and lower emissions.

State of the art design tools

Linde Engineering employs Intergraph's Plant Design System (PDS®) three-dimensional modeling software to create equipment, structural, and piping drawings. During project execution, our clients can review models with virtual plant walkthroughs, assuring fast and error free erection of the furnace without field modification.

Case studies

Example 1: Flare minimization during ethylene plant start up
Plant profile: World scale ethylene plant
Feed stock: Naphtha and LPG
Scope:

- → Process study and document reviews
- → Basic engineering
- → Safety reviews
- → On site support

Schedule: Initial study through on site turnaround support over a 30 month period
Summary: Implemented concepts from initial study. Flare load during start up reduced 10X

Example 2: Expansion project
Plant profile: U.S. Gulf Coast
Technical data:

- → Two 220 KtA furnaces
- → Ethane feed - high conversion
- → Twin radiant cell - single cell decoke
- → PyroCrack® 2-2 coil
- → Linear quench exchangers
- → 100% floor firing
- → NOx emission <0.01 lb/MM Btu

Scope: Engineering, procurement, construction with new pipe rack and furnace tie-in

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